Digital Electrons

The Impact of the Fourth Industrial Revolution on Energy Resiliency

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CAPER Spring Meeting

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Resiliency….

- Reliability – all the time
- Redundancy – options
- Robustness – tough
- Recovery – speed

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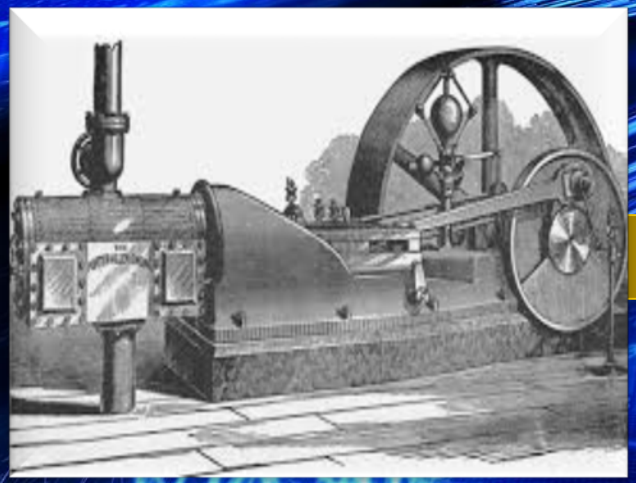
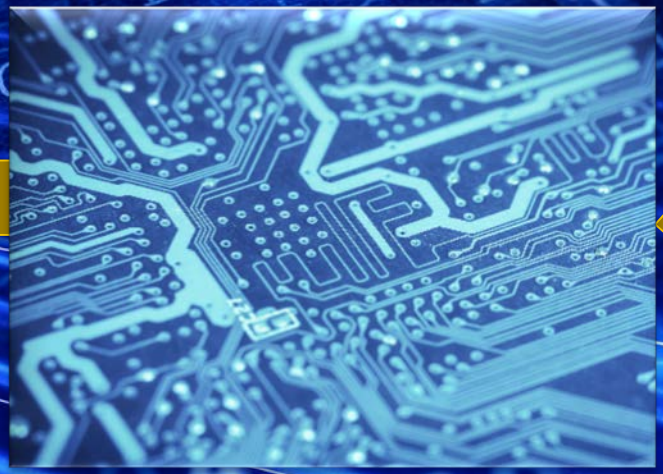
The Industrial Revolution 4.0

1.0 – Water and Steam



2.0 – Electricity / Mass Production

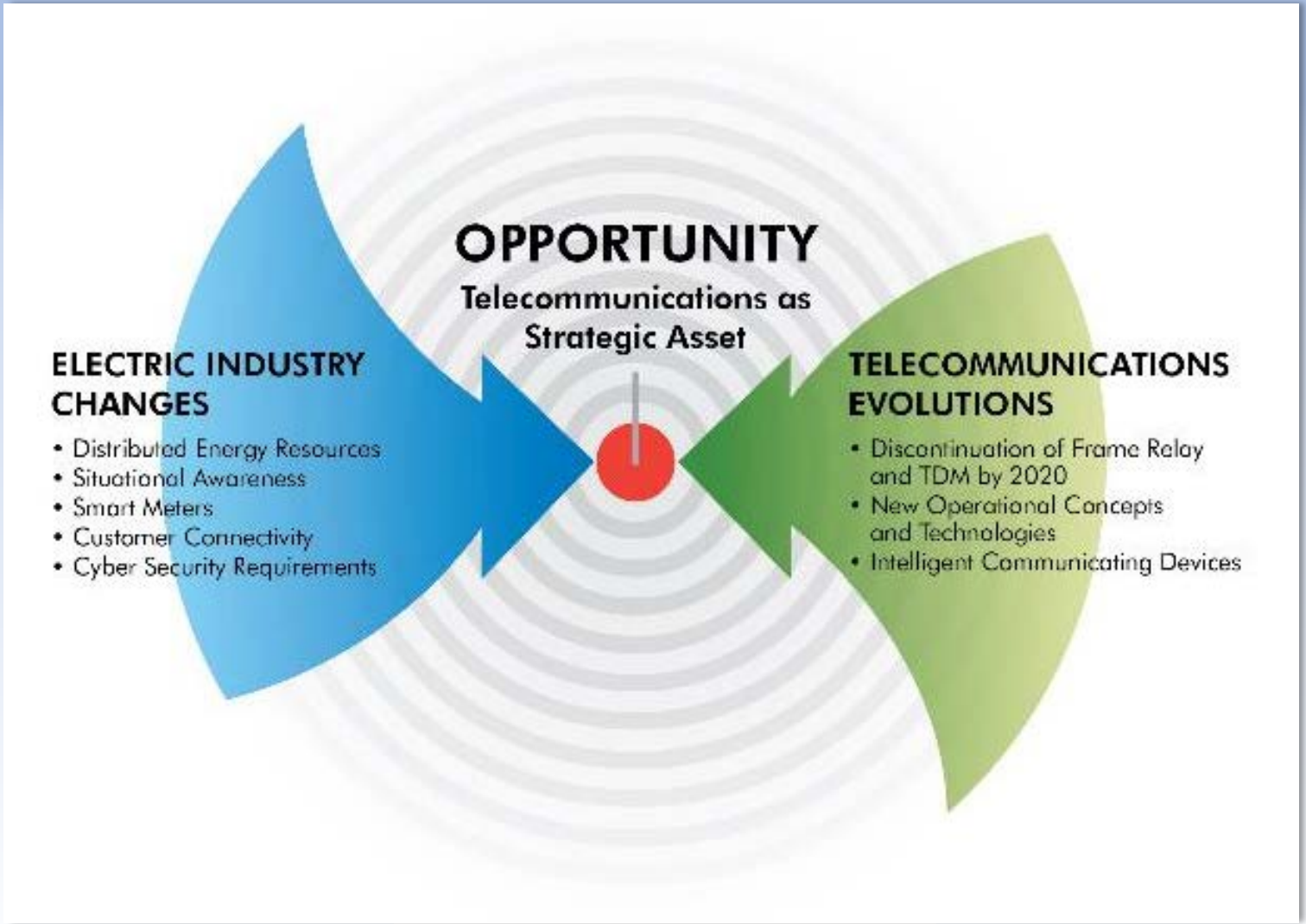


3.0 – Information Technology

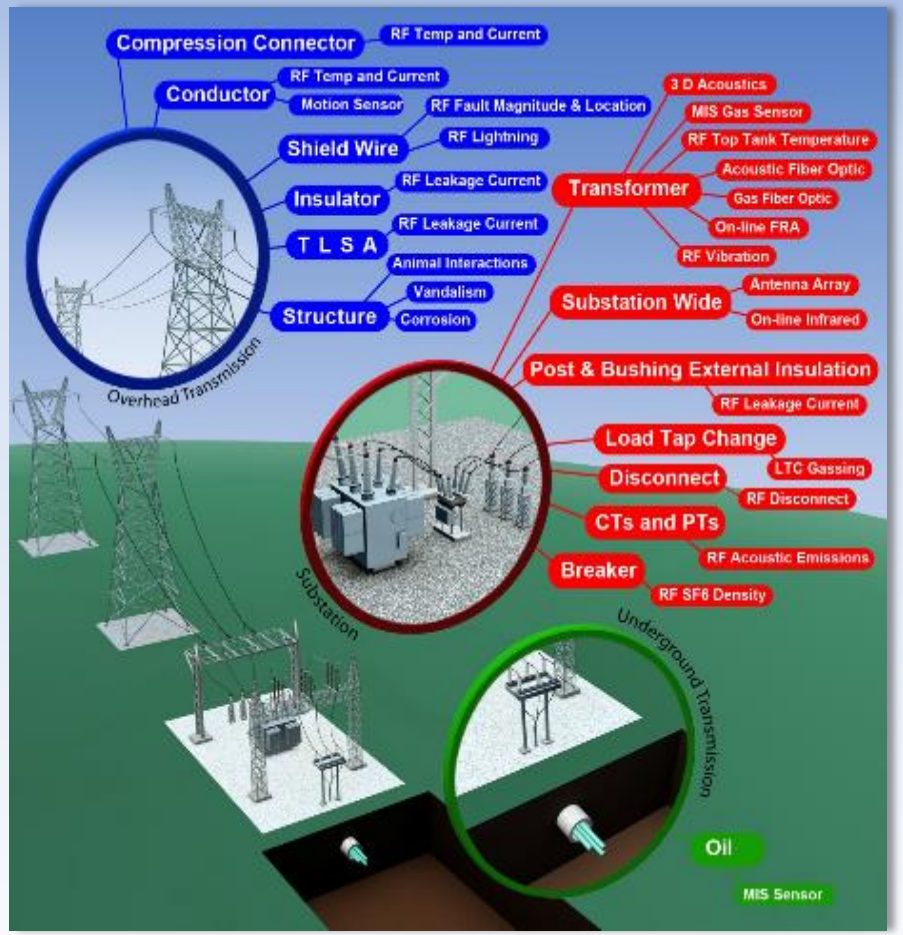
4.0 – Merging of Cyber and Physical

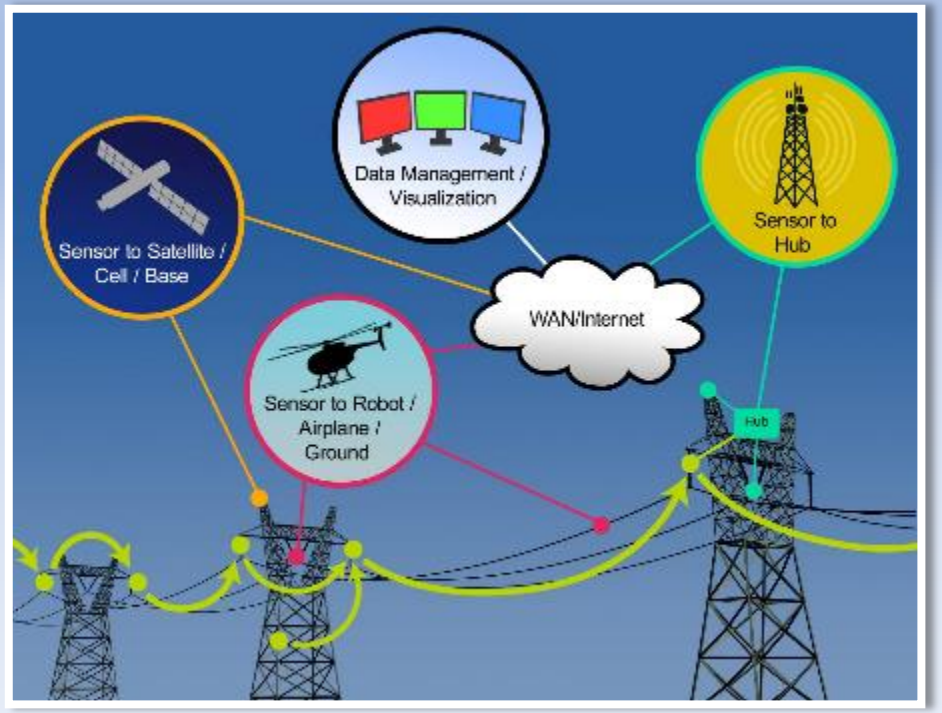
Chattanooga – GIG City…

Ubiquitous Communications Network



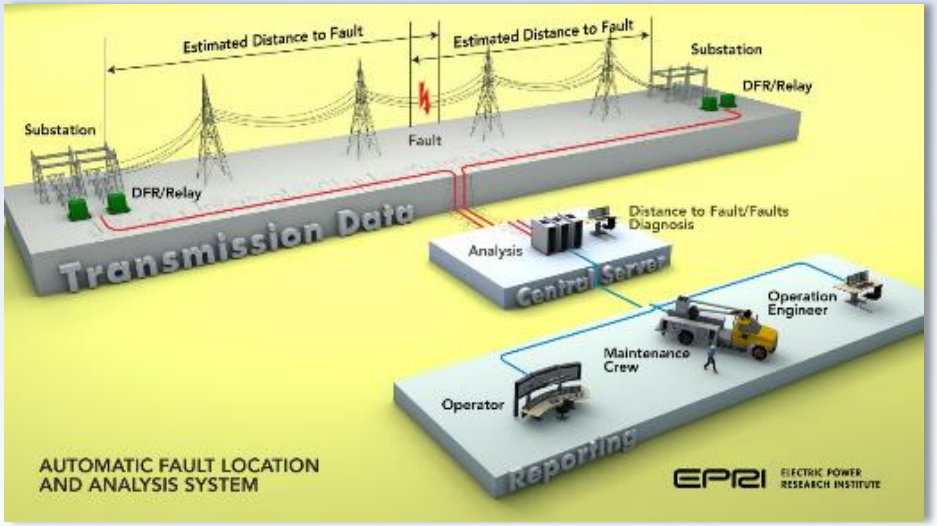
Enabled Infrastructure





Courtesy of EPRI

Effective Data Architecture & Analytics



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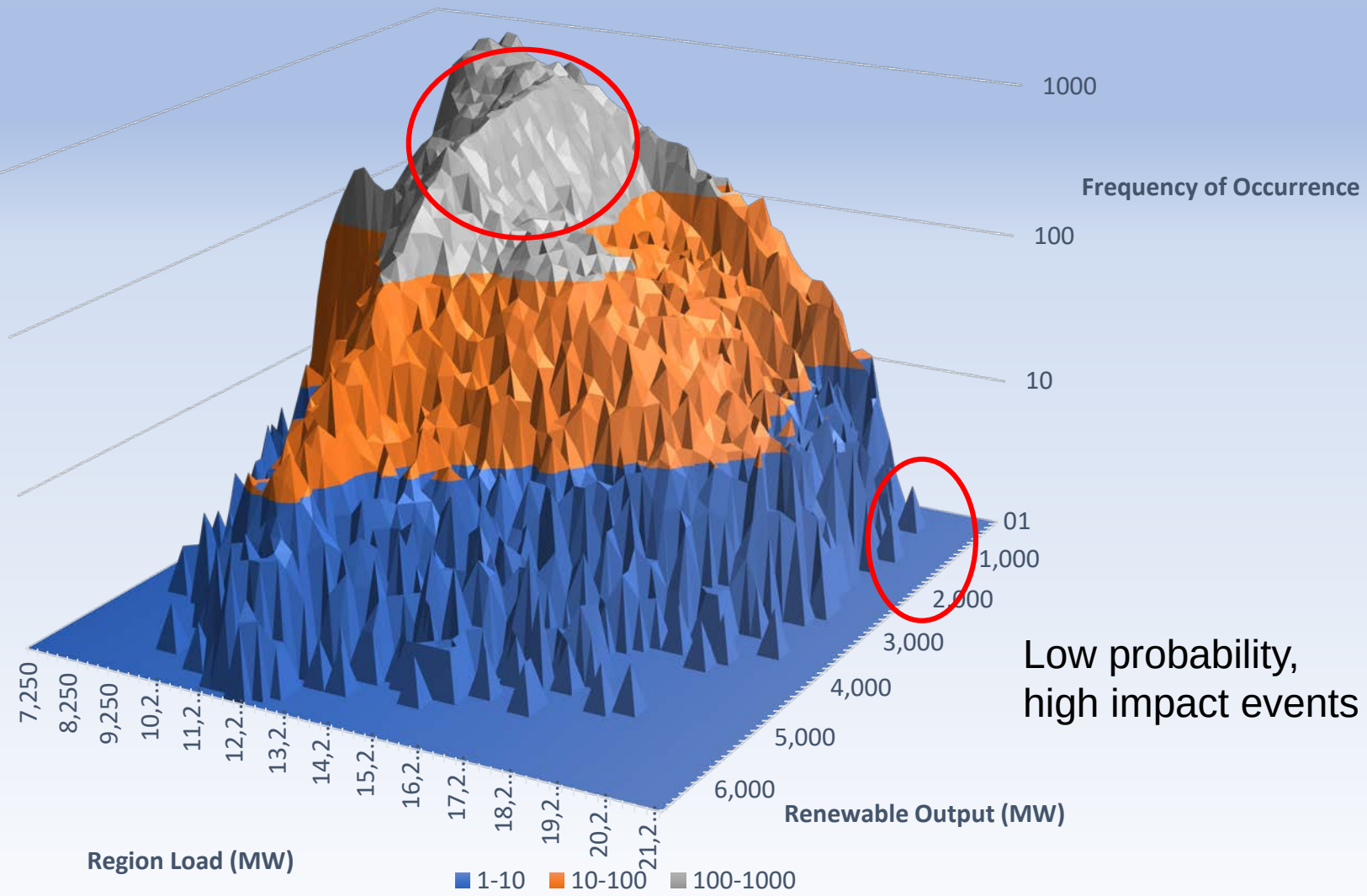
Stochastic Digital Model



Low probability, high impact events

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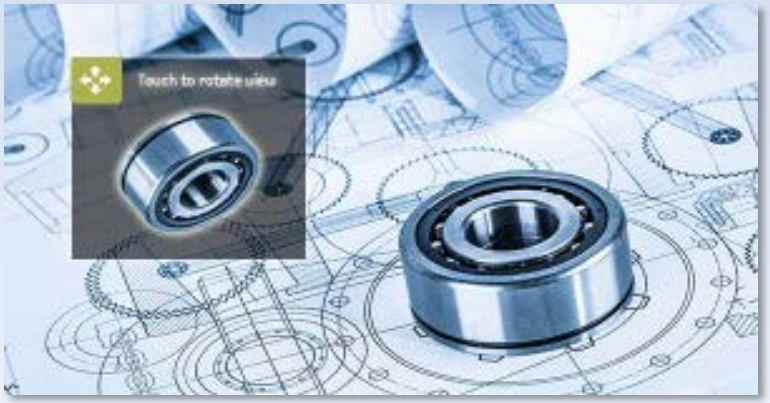
Digital Workforce



The Digital Grid

- *Ubiquitous Communication System*
- *Enabled Infrastructure*
- *Effective Data Architecture and Analytics*
- *Stochastic Digital Model*
- *Digital Workforce*